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is in direct contact with said gate oxide film;

forming diffusion regions in said substrate at both lateral sides of said gate electrode pattern by introducing impurity element into said substrate through said gate oxide film while using said gate electrode pattern as a mask; and

introducing N atoms, after said step of introducing said impurity element, into said gate oxide film while using said gate electrode pattern as a mask,

wherein said step of introducing N atoms into said gate oxide film includes an ion implantation process of N ions conducted with a lose of $1 - 3 \times 10^{14} \text{cm}^{-2}$.